

THERE IS CLAIMED:

1. A method of detecting switching subnodes in a monoblock wavelength division multiplex optical switching network, each subnode corresponding to a given level of granularity and to a given switching function, which method includes the following steps:
 - (a) collecting information concerning how traffic is crossing the initial monoblock switching node;
 - (b) defining the granularity and switching function of the subnodes to be detected;
 - (c) considering each subnode successively in an order corresponding to reducing switching constraints; and
 - (d) for each subnode, selecting all or part of the traffic of an incoming granularity and an outgoing granularity that satisfy the switching constraints of the subnode concerned.
2. The method claimed in claim 1 wherein said information collected in step (a) is information contained in the initial switching matrix of the monoblock node whose subnodes are to be detected.
3. The method claimed in claim 1 wherein step (b) detects successively:
 - (b1) the fiber level optical switching subnode;
 - (b2) the band level optical switching network with a direct routing function, i.e. with no band translation;
 - (b3) the band level optical switching subnode with subband translation;
 - (b4) the subband level optical switching subnode with a direct routing function, i.e. with no subband translation;
 - (b5) the subband level optical switching subnode with subband translation;
 - (b6) the wavelength level optical switching subnode with a direct routing function, i.e. with no wavelength translation; and
 - (b7) the wavelength level optical switching subnode with wavelength translation.
4. The method claimed in claim 3, including further detecting:
 - (b8) the subnode corresponding to an insert/extract multiplexer with a direct routing function, i.e. with no wavelength translation; and
 - (b9) the subnode corresponding to an insert/extract multiplexer with wavelength translation.
5. The method claimed in claim 1 wherein step (d) includes the following substeps:
 - (d1) marking all of the traffic of the incoming granularity as coming from the

subnode concerned and all the traffic of the outgoing granularity as going to the subnode concerned;

(d2) marking the traffic that satisfies the switching constraints of the subnode concerned as belonging to that subnode; and

(d3) increasing the number of ports of the subnode concerned.

6. The method claimed in claim 3 wherein steps (b2), (b4), (b6) and (b8) use a ricochet function for verifying the link with a conversion on any incoming granularity that may be switched in a routing subnode to prevent all internal traffic between subnodes having the same level of granularity.
7. The method claimed in claim 6 wherein the ricochet function for verifying the link with a conversion includes the following looped steps:

(i) verifying that none of the wavelengths of the incoming granularity is linked with a translation;

(j) verifying that none of the wavelengths of the outgoing granularity or granularities corresponding to the incoming granularity is linked with a translation;

(k) marking the wavelengths verified to prevent looping; and

(l) for each outgoing granularity, applying the function for verifying the link with a conversion again to all of the wavelengths constituting the incoming granularity of the wavelengths constituting the outgoing granularity.